

## **AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions and listings of claims in the application:

1-23. (Canceled)

24. (Previously presented) An isolated or purified oligopeptide or polypeptide comprising an amino acid sequence with at least 94% identity to SEQ ID NO:13 in which:

(i) from 0 to 4 amino acids are substituted, deleted, or inserted as compared with SEQ ID NO:13, and

(ii) at least one of the five amino acid substitutions in the S antigen of the hepatitis B variant HDB 05 as compared to the HBV adw wild type is preserved, wherein said substitutions are T 115 (R), P 120 (Q), S 154 (L), E 164 (V), and Q 181 (R).

25. (Previously presented) The oligopeptide or polypeptide of claim 24, wherein the oligopeptide or polypeptide reacts with sera from individuals who are infected with the hepatitis B variant HDB 05.

26. (Previously presented) An isolated or purified oligopeptide or polypeptide, comprising an amino acid sequence with at least 94% identity to SEQ ID NO:13 in which:

(i) from 0 to 4 amino acids are substituted, deleted or inserted as compared with SEQ ID NO:13, and

(ii) at least two of the five amino acid substitutions in the S antigen of the hepatitis B variant HDB 05 as compared to the HBV adw wild type are preserved,

wherein said substitutions are chosen from T 115 (R), P 120 (Q), S 154 (L), E 164 (V), and Q 181 (R).

27. (Previously presented) The oligopeptide or polypeptide of claim 26, wherein the oligopeptide or polypeptide reacts with sera from individuals who are infected with the hepatitis B variant HDB 05.

28. (Currently amended) An isolated or purified oligopeptide or polypeptide comprising a fragment of SEQ ID NO:12, wherein the fragment of SEQ ID NO:12 comprises at least one of the following sequences:

(i) a sequence of at least 8 consecutive amino acids that includes amino acid position 73 of SEQ ID NO:12 and is found within positions 66-80 of SEQ ID NO:12;

(ii) a sequence of at least 6 consecutive amino acids that includes amino acid position 78 of SEQ ID NO:12 and is found within positions 73-83 of SEQ ID NO:12;

(iii) a sequence of at least 6 consecutive amino acids that includes amino acid position 112 of SEQ ID NO:12 and is found within positions 107-117 of SEQ ID NO:12;

(iv) a sequence of at least ~~6~~ 30 consecutive amino acids that includes amino acid position 122 of SEQ ID NO:12 and is found within positions ~~417-427~~ 93-151 of SEQ ID NO:12; and

(v) a sequence of at least 6 consecutive amino acids that includes amino acid position 139 of SEQ ID NO:12 and is found within positions 134-144 of SEQ ID NO:12.

29. (Previously presented) The oligopeptide or polypeptide of claim 28, comprising an amino acid sequence chosen from SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15, SEQ ID NO:16, SEQ ID NO:17, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:21, and SEQ ID NO:22.

30. (Previously presented) The oligopeptide or polypeptide of claim 28, wherein the oligopeptide or polypeptide reacts with sera from individuals who are infected with the hepatitis B variant HDB 05.

31-32. (Canceled)

33. (Previously presented) A composition comprising at least one immunogenic molecule comprising one or more oligopeptides or polypeptides as claimed in one of claims 24, 26, 28, or 29, and optionally further comprising one or more HBV immunogens.

34. (Previously presented) A method of preparing the oligopeptide or polypeptide as claimed in one of claims 24, 26, 28, or 29, which comprises culturing a cell and expressing the oligopeptide or polypeptide in said cell.

35. (Previously presented) The method as claimed in claim 34, wherein the oligopeptide or polypeptide is isolated from the cells and separated from other oligopeptides or polypeptides.

36. (Currently amended) An antibody which binds to the oligopeptide or polypeptide as claimed in one of claims 24, 26, 28, or 29, ~~or~~ 34.

37. (Previously presented) The antibody as claimed in claim 36, which binds to an oligopeptide or polypeptide comprising an amino acid sequence with at least 94% identity to SEQ ID NO:13 with higher affinity than to HBs antigens belonging to genotype A, subtype adw, of hepatitis B virus.

38. (Previously presented) The antibody as claimed in claim 36, which does not bind to HBs antigens belonging to genotype A, subtype adw, of hepatitis B virus.

39. (Currently amended) An antiidiotypic antibody which represents an amino acid sequence as defined in one of claims 24, 26, 28, or 29, ~~or 31~~.

40. (Previously presented) A kit for detecting hepatitis B viruses, comprising at least one of (i) an oligopeptide or polypeptide as claimed in one of claims 24, 26, 28, or 29; (ii) an oligonucleotide or polynucleotide encoding said oligopeptide or polypeptide; and (iii) an antibody which recognizes said oligopeptide or polypeptide.

41. (Previously presented) A method for detecting a hepatitis B antigen, comprising (a) incubating a sample with the antibody of claim 36 under conditions which allow the formation of antigen-antibody complexes; and (b) detecting antigen-antibody complexes.

42. (Previously presented) A method of identifying antibodies directed against a hepatitis B antigen, comprising (a) incubating a sample with an oligopeptide or polypeptide as claimed in one of claims 24, 26, 28, or 29, under conditions which allow the formation of antigen-antibody complexes; and (b) detecting antibody-antigen complexes comprising said oligopeptide or polypeptide.

43. (Previously presented) The isolated or purified oligopeptide or polypeptide of claim 24, wherein at least three of the five amino acid substitutions in the S antigen of the hepatitis B variant HDB 05 as compared to the HBV adw wild type are preserved, wherein said substitutions are chosen from T 115 (R), P 120 (Q), S 154 (L), E 164 (V), and Q 181 (R).

44. (Previously presented) The isolated or purified oligopeptide or polypeptide of claim 24, wherein at least four of the five amino acid substitutions in the S antigen of the hepatitis B variant HDB 05 as compared to the HBV adw wild type are preserved,

wherein said substitutions are chosen from T 115 (R), P 120 (Q), S 154 (L), E 164 (V), and Q 181 (R).

45. (Previously presented) The isolated or purified oligopeptide or polypeptide of claim 24, wherein the five amino acid substitutions in the S antigen of the hepatitis B variant HDB 05 as compared to the HBV adw wild type are preserved, wherein said substitutions are T 115 (R), P 120 (Q), S 154 (L), E 164 (V), and Q 181 (R).

46. (Allowed) The oligopeptide or polypeptide of claim 25, wherein the region of the amino acid sequence that reacts with the sera is chosen from at least one of the regions corresponding to amino acids 115 to 120, amino acids 154 to 164, and amino acid 154 to 185 of the S antigen of HBV.

47-48. (Canceled)

49. (Previously presented) The isolated or purified oligopeptide or polypeptide of claim 45,

wherein the oligopeptide or polypeptide reacts with sera from individuals who are infected with the hepatitis B variant HDB 05; and

wherein the region of the amino acid sequence that reacts with the sera is chosen from at least one of the regions corresponding to amino acids 115 to 120, amino acids 154 to 164, and amino acid 154 to 185 of the S antigen of HBV.

50. (Previously presented) The isolated or purified oligopeptide or polypeptide of claim 24,

wherein at least two of the five amino acid substitutions in the S antigen of the hepatitis B variant HDB 05 as compared to the HBV adw wild type are preserved,

wherein said substitutions are chosen from T 115 (R), P 120 (Q), S 154 (L), E 164 (V), and Q 181 (R); and

wherein the oligopeptide or polypeptide reacts with sera from individuals who are infected with the hepatitis B variant HDB 05; and

wherein the region of the amino acid sequence that reacts with the sera is chosen from at least one of the regions corresponding to amino acids 115 to 120, amino acids 154 to 164, and amino acid 154 to 185 of the S antigen of HBV.

51. (Previously presented) The isolated or purified oligopeptide or polypeptide of claim 28,

wherein the oligopeptide or polypeptide reacts with sera from individuals who are infected with the hepatitis B variant HDB 05; and

wherein the region of the amino acid sequence that reacts with the sera is chosen from at least one of the regions corresponding to amino acids 115 to 120, amino acids 154 to 164, and amino acid 154 to 185 of the S antigen of HBV.

52. (New) An isolated or purified oligopeptide or polypeptide comprising a fragment of SEQ ID NO:12, wherein the fragment of SEQ ID NO:12 comprises at least two of the following sequences:

(i) a sequence of at least 5 consecutive amino acids that includes amino acid position 73 of SEQ ID NO:12 and is found within positions 69-77 of SEQ ID NO:12;

(ii) a sequence of at least 5 consecutive amino acids that includes amino acid position 78 of SEQ ID NO:12 and is found within positions 74-82 of SEQ ID NO:12;

(iii) a sequence of at least 5 consecutive amino acids that includes amino acid position 112 of SEQ ID NO:12 and is found within positions 108-116 of SEQ ID NO:12;

(iv) a sequence of at least 5 consecutive amino acids that includes amino acid position 122 of SEQ ID NO:12 and is found within positions 118-126 of SEQ ID NO:12; and

(v) a sequence of at least 5 consecutive amino acids that includes amino acid position 139 of SEQ ID NO:12 and is found within positions 135-143 of SEQ ID NO:12.

53. (New) An isolated or purified oligopeptide or polypeptide comprising a fragment of SEQ ID NO:12, wherein the fragment of SEQ ID NO:12 comprises at least three of the following sequences:

(i) a sequence of at least 5 consecutive amino acids that includes amino acid position 73 of SEQ ID NO:12 and is found within positions 69-77 of SEQ ID NO:12;

(ii) a sequence of at least 5 consecutive amino acids that includes amino acid position 78 of SEQ ID NO:12 and is found within positions 74-82 of SEQ ID NO:12;

(iii) a sequence of at least 5 consecutive amino acids that includes amino acid position 112 of SEQ ID NO:12 and is found within positions 108-116 of SEQ ID NO:12;

(iv) a sequence of at least 5 consecutive amino acids that includes amino acid position 122 of SEQ ID NO:12 and is found within positions 118-126 of SEQ ID NO:12; and

(v) a sequence of at least 5 consecutive amino acids that includes amino acid position 139 of SEQ ID NO:12 and is found within positions 135-143 of SEQ ID NO:12.

54. (New) An isolated or purified oligopeptide or polypeptide comprising a fragment of SEQ ID NO:12, wherein the fragment of SEQ ID NO:12 comprises at least four of the following sequences:

(i) a sequence of at least 5 consecutive amino acids that includes amino acid position 73 of SEQ ID NO:12 and is found within positions 69-77 of SEQ ID NO:12;

(ii) a sequence of at least 5 consecutive amino acids that includes amino acid position 78 of SEQ ID NO:12 and is found within positions 74-82 of SEQ ID NO:12;

(iii) a sequence of at least 5 consecutive amino acids that includes amino acid position 112 of SEQ ID NO:12 and is found within positions 108-116 of SEQ ID NO:12;

(iv) a sequence of at least 5 consecutive amino acids that includes amino acid position 122 of SEQ ID NO:12 and is found within positions 118-126 of SEQ ID NO:12;  
and

(v) a sequence of at least 5 consecutive amino acids that includes amino acid position 139 of SEQ ID NO:12 and is found within positions 135-143 of SEQ ID NO:12.

55. (New) An isolated or purified oligopeptide or polypeptide comprising a fragment of SEQ ID NO:12, wherein the fragment of SEQ ID NO:12 comprises:

(i) a sequence of at least 5 consecutive amino acids that includes amino acid position 73 of SEQ ID NO:12 and is found within positions 69-77 of SEQ ID NO:12;

(ii) a sequence of at least 5 consecutive amino acids that includes amino acid position 78 of SEQ ID NO:12 and is found within positions 74-82 of SEQ ID NO:12;

(iii) a sequence of at least 5 consecutive amino acids that includes amino acid position 112 of SEQ ID NO:12 and is found within positions 108-116 of SEQ ID NO:12;

(iv) a sequence of at least 5 consecutive amino acids that includes amino acid position 122 of SEQ ID NO:12 and is found within positions 118-126 of SEQ ID NO:12;  
and



(v) a sequence of at least 5 consecutive amino acids that includes amino acid position 139 of SEQ ID NO:12 and is found within positions 135-143 of SEQ ID NO:12.